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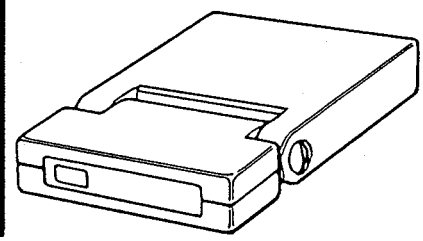
Service Manual



ORDER NO.
ARP1837

MULTI-ROOM REMOTE SYSTEM SENSOR UNIT

MR-100

REMOTE CONTROL EMITTER

MR-101

MR-100 AND MR-101 HAVE FOLLOWING VERSIONS :

Type	Applicable model		Power requirement	Export destination
	MR-100	MR-101		
KUC	○	–	(DC power supply)	U. S. A.
RD/G	○	–	(DC power supply)	U. S. Military
Z/UC	–	○	(DC power supply)	U. S. A. and Canada

CONTENTS

1. EXPLODED VIEW AND PARTS LIST 2
2. PACKING 3
3. ELECTRICAL PARTS LIST 4
4. BLOCK DIAGRAM 6
5. SCHEMATIC DIAGRAM 7
6. P. C. BOARDS PATTERN 9

SPECIFICATIONS

Reception System ..... Infrared Reception System
INPUT JACK (STEREO mini) 3.5 Φ 1
OUTPUT JACK (STEREO mini) 2.5 Φ 1
Power requirements
(AC adaptor IN)
U.S., Canadian models ..... AC 120V, 60 Hz
Other destination models ..... AC 110 ~ 127 V/
220V ~ 240V (switchable), 50/60 Hz
(AC adaptor OUT) ..... DC 9V, 100 mA
Dimensions ..... 90 (W) × 165 (D) × 30 (H) mm
3-9/16 (W) × 6-1/2 (D) × 1-3/16 (H) in
Weight ..... 220 g (7.7 oz)

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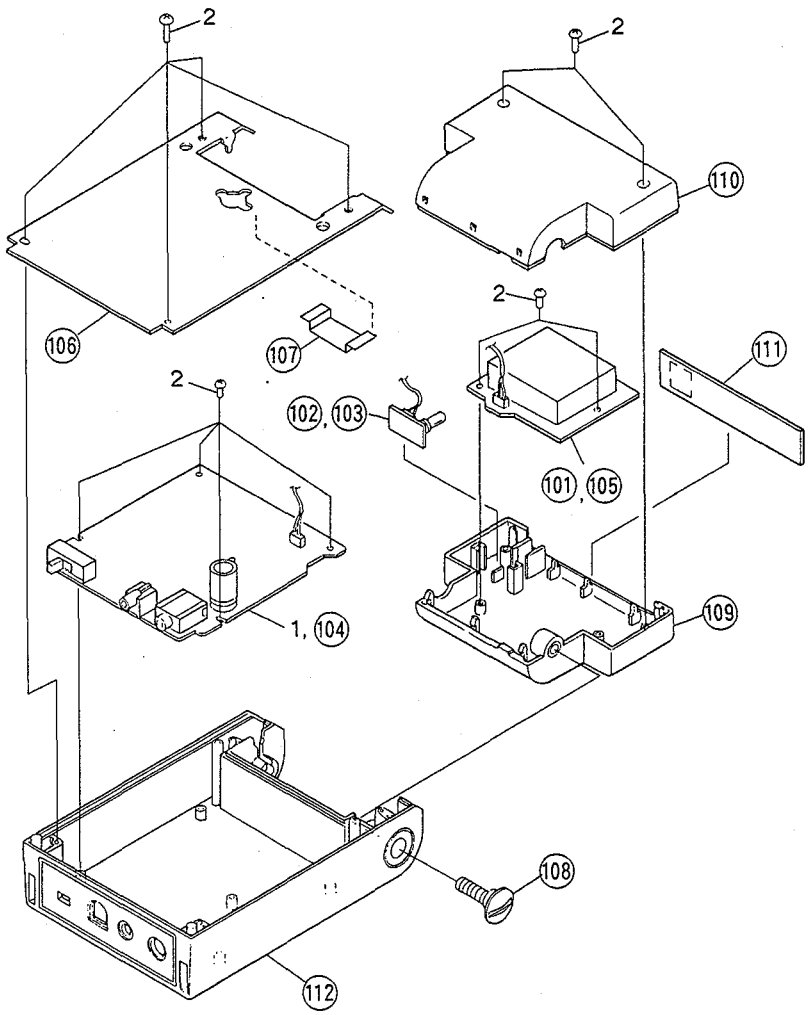
1. EXPLODED VIEW AND PARTS LIST

NOTES :
- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List

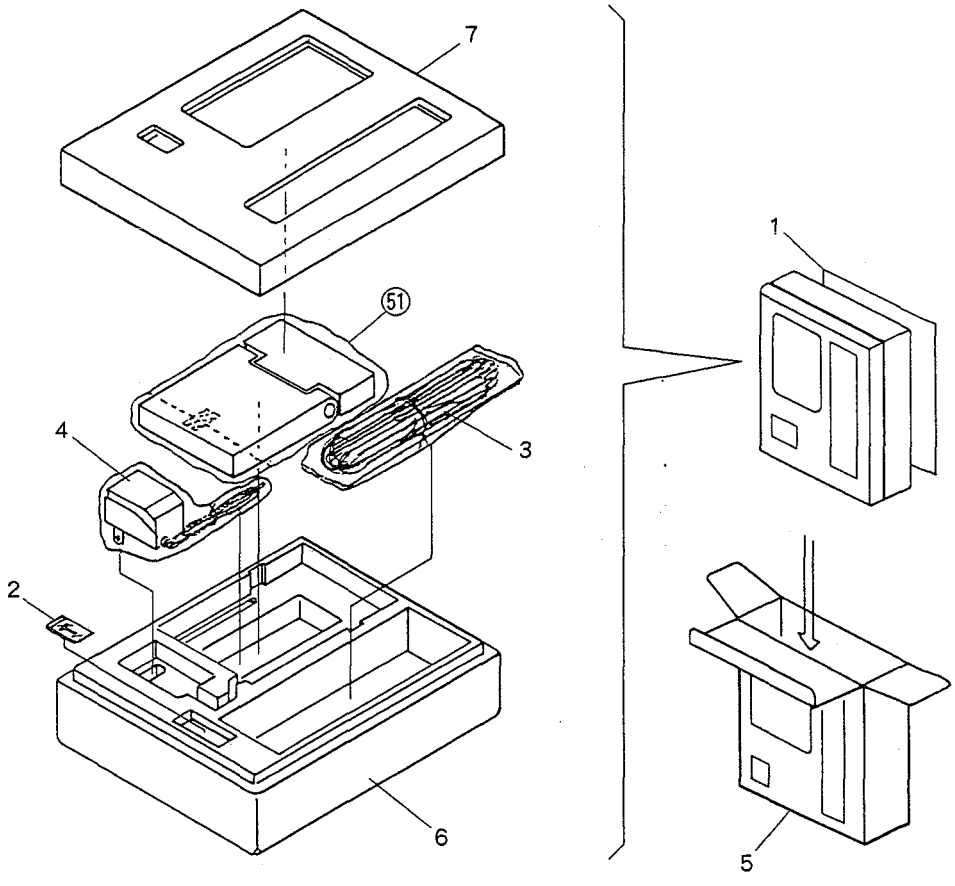
Mark	No.	Part No.	Description
	1	AWZ2436	PHOTO IC assembly (MR-100 only)
	2	BBZ20P060FZK	Screw
	101		PHOTO DIODE assembly (MR-100 only)
	102		LED assembly (MR-100 only)
	103		REMOTE assembly (MR-101 only)
	104		IR assembly (MR-101 only)
	105		REMOTE assembly A (MR-101 only)
	106		Bottom plate
	107		Blind sheet
	108		Screw
	109		Front case A
	110		Front case B
	111		Sheet panel (MR-100) Sheet panel (MR-101)
	112		Bonnet case (MR-100) Bonnet case (MR-101)



2. PACKING

Parts List

Mark	No.	Part No.	Description
	1	ARB1205	Operating instructions (MR-100)
		ARB1206	Operating instructions (MR-101)
	2	ARB1091	Bag with screw
	3	ADE1066	Connection cord with mini plug (MR-100)
		ADE1064	Connection cord with mini plug (MR-101)
	4	AXY1013	AC adaptor (MR-100 only)
	5	AHD1715	Packing case
	6	AHA1280	Bottom pad
	7	AHA1281	Top pad
	51		Packing bag



3. ELECTRICAL PARTS LIST

NOTES :
- Parts without part number cannot be supplied.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω → 56 × 10^1 → 561 ····· RD1/4PS 5 6 1 J
47k Ω → 47 × 10^3 → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ····· RN1/4SR 5 6 2 1 F

3.1 MR – 100

P. C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	PHOTO IC assembly	AWZ2436
	PHOTO DIODE assembly	
	LED assembly	

PHOTO IC Assembly (AWZ2436)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC101	M51014L
	IC102	UPC78L05
	Q102	2SC1815
	Q103,Q105	2SC2458
	Q104,Q106,Q107	RN1201
	Q108,Q109,Q110	RN2201
	D106	RD7.5ESB2
	D104,D105,D107,D108	1SS252
	D110	11E2

SWITCH

Mark	Symbol & Description	Part No.
	S101 Slide switch	ASH1009

COIL

Mark	Symbol & Description	Part No.
	L101 Inductor	LTA822J

CAPACITORS

Mark	Symbol & Description	Part No.
	C106	CEAS010M50
	C108,C115	CEAS220M50
	C119	CEAS4R7M50
	C117,C121	CEAS470M10
	C118,C120	CEAS470M16
	C113	CKMYB102K50
	C114,C116	CQMA103J50
	C109,C111	CQMA122J50
	C110	CQMA222J50
	C107	CQMA332J50
	C112	CQMA333J50

RESISTORS

Mark	Symbol & Description	Part No.
	R123	RD1/2PMF470J
⚠	R125	RFA1/4PS4R7J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Mini jack	AKN1020
	Mini jack	AKN1021
	DC jack	AKN-203

PHOTO DIODE Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q101	2SK246
	D101	PH302B
	D102	1SS252

CAPACITORS

Mark	Symbol & Description	Part No.
	C101	CEAS010M50
	C105	CEAS470M10
	C103	CQMA222J50
	C102	CQMA272K50
	C104	CQMA273J50

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

LED Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D103	AEL1071

3.2 MR − 101

P. C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	REMOTE assembly	
	IR assembly	
	REMOTE assembly A	

REMOTE Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D202	AEL1097

IR Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q110	2SA1515
	D201	1SS252

SWITCH

Mark	Symbol & Description	Part No.
	S101 Slide switch	ASH1015

CAPACITOR

Mark	Symbol & Description	Part No.
	C201	CEAS102M10

RESISTORS

Mark	Symbol & Description	Part No.
	R201,R202	RD1/8PM□□□J
	R203	RD1/4PM1R5J

OTHERS

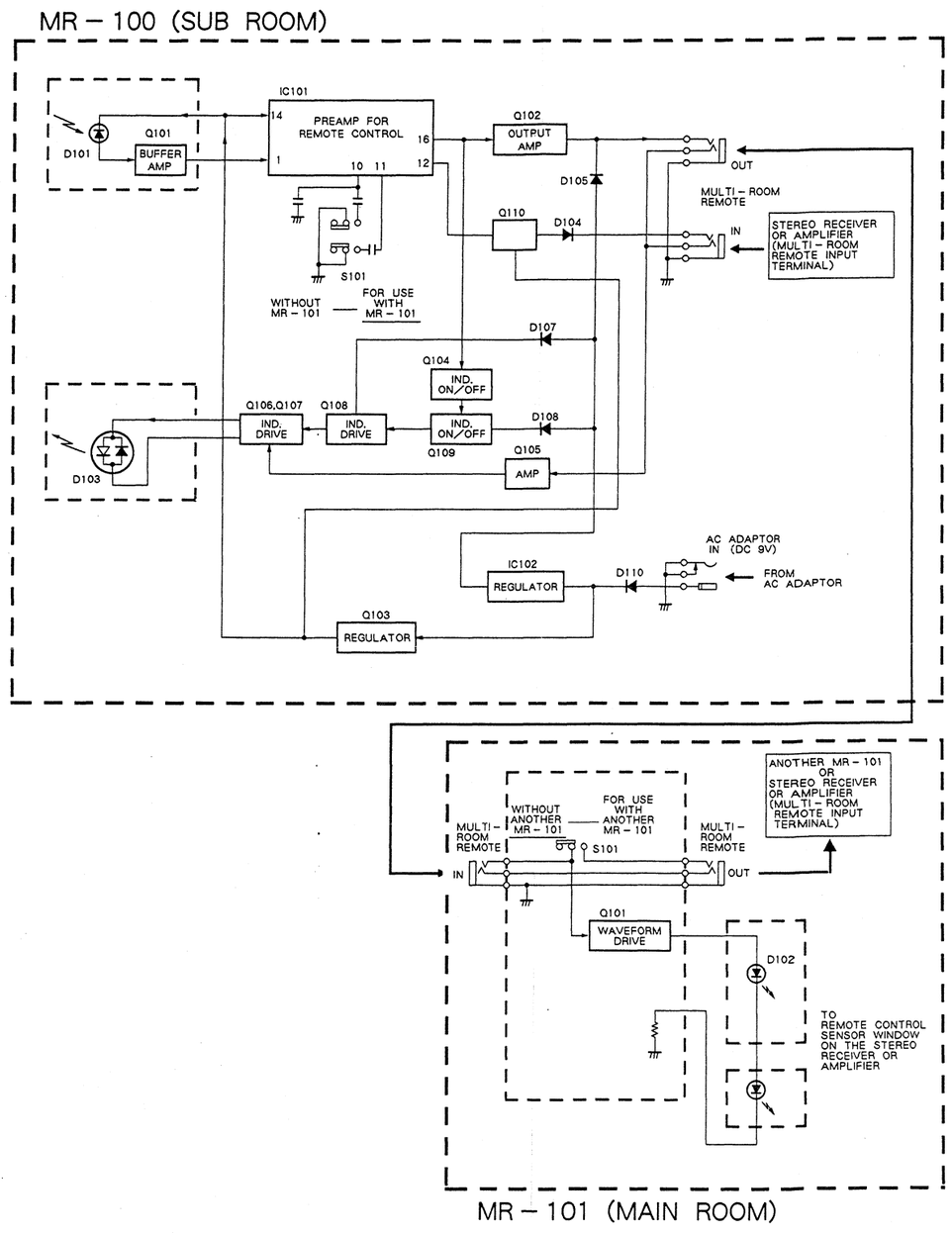
Mark	Symbol & Description	Part No.
	Mini jack	AKN1020
	Mini jack	AKN1021

REMOTE Assembly A

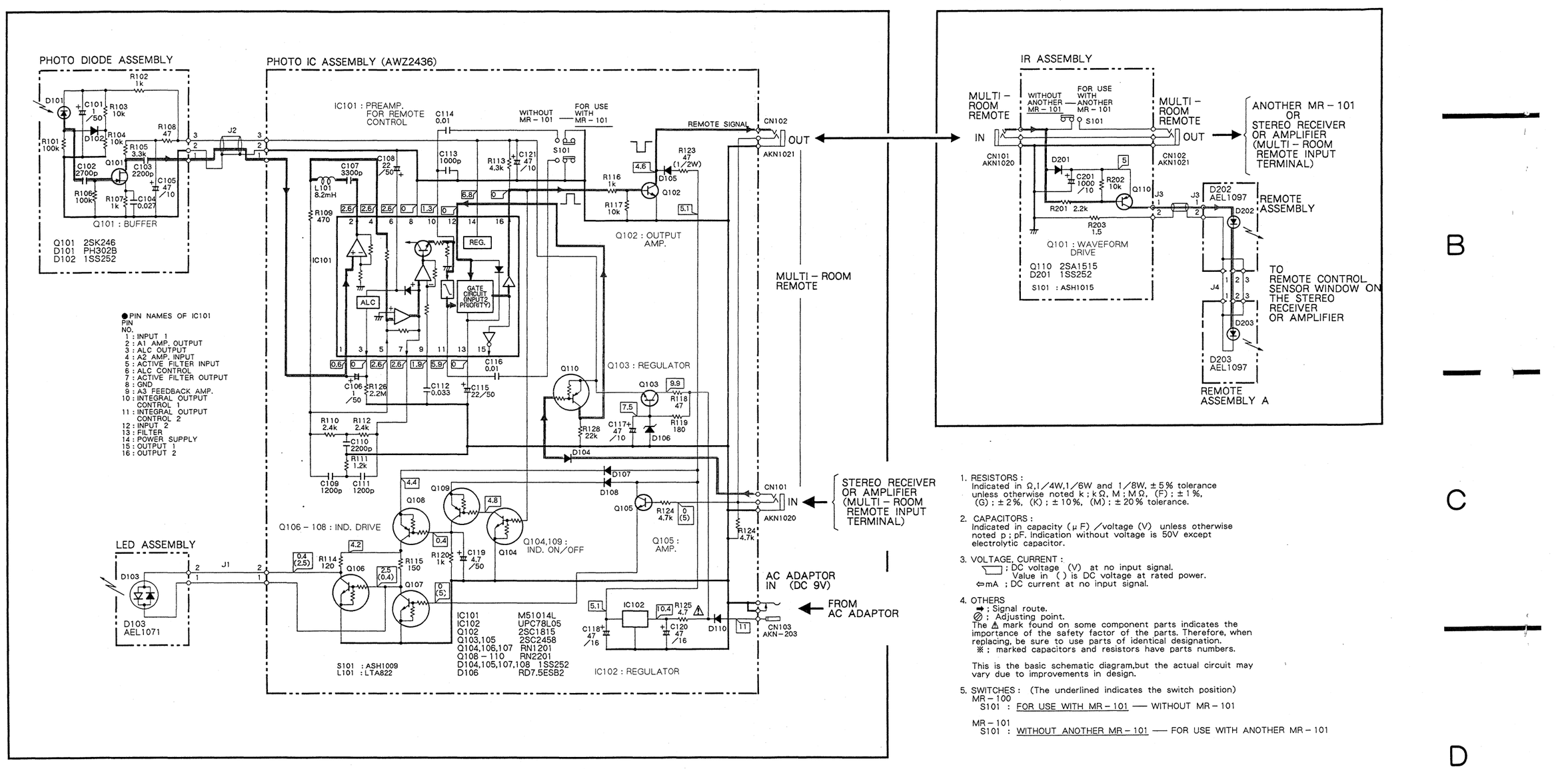
SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D203	AEL1097

4. BLOCK DIAGRAM



5. SCHEMATIC DIAGRAM



1. RESISTORS :
   Indicated in Ω, 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.

2. CAPACITORS :
   Indicated in capacity (μF) /voltage (V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT :
   ▭ ; DC voltage (V) at no input signal.
   Value in ( ) is DC voltage at rated power.
   ⇦mA ; DC current at no input signal.

4. OTHERS
   ➡ ; Signal route.
   Ⓐ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
   ※ ; marked capacitors and resistors have parts numbers.

   This is the basic schematic diagram,but the actual circuit may vary due to improvements in design.

5. SWITCHES : (The underlined indicates the switch position)
   MR – 100
   S101 : FOR USE WITH MR – 101 —— WITHOUT MR – 101

   MR – 101
   S101 : WITHOUT ANOTHER MR – 101 —— FOR USE WITH ANOTHER MR – 101

6. P. C. BOARDS PATTERN

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

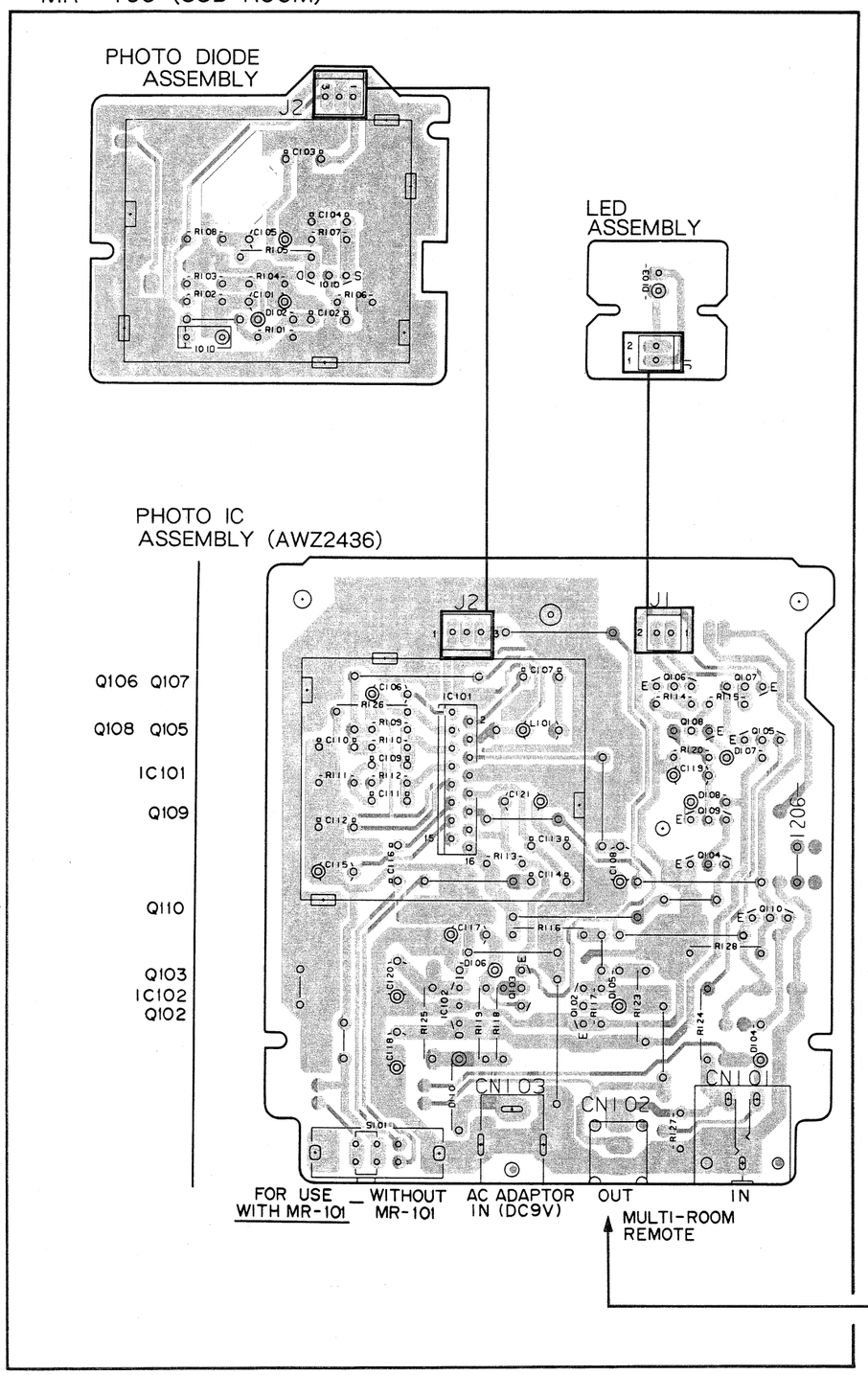
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 (E C B)	E C or E C	Transistor
Q215 (E C B)	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

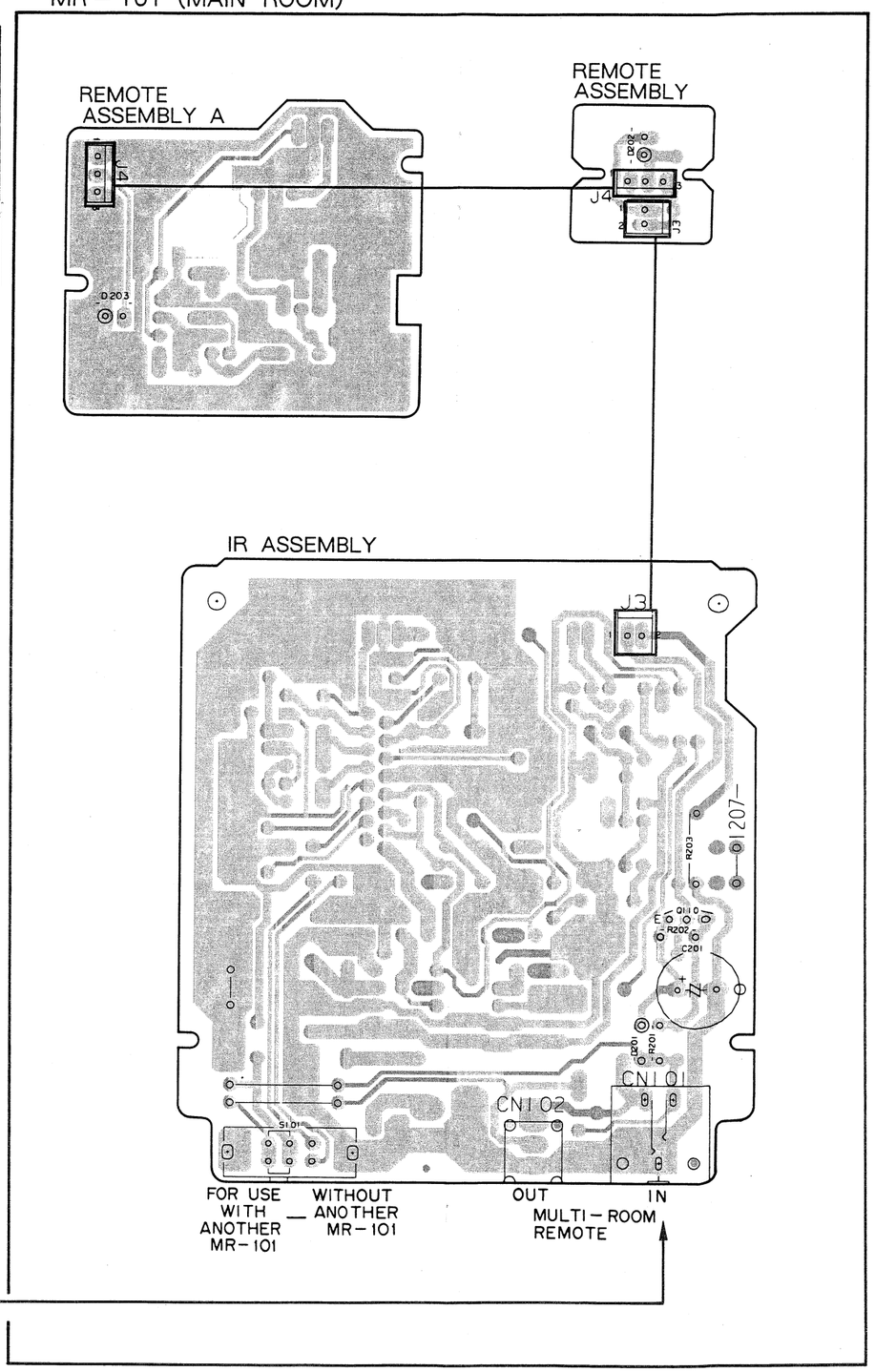
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⓞ(double circles) shows negative terminal.
4. The diode terminal marked with ⓞ(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

MR − 100 (SUB ROOM)



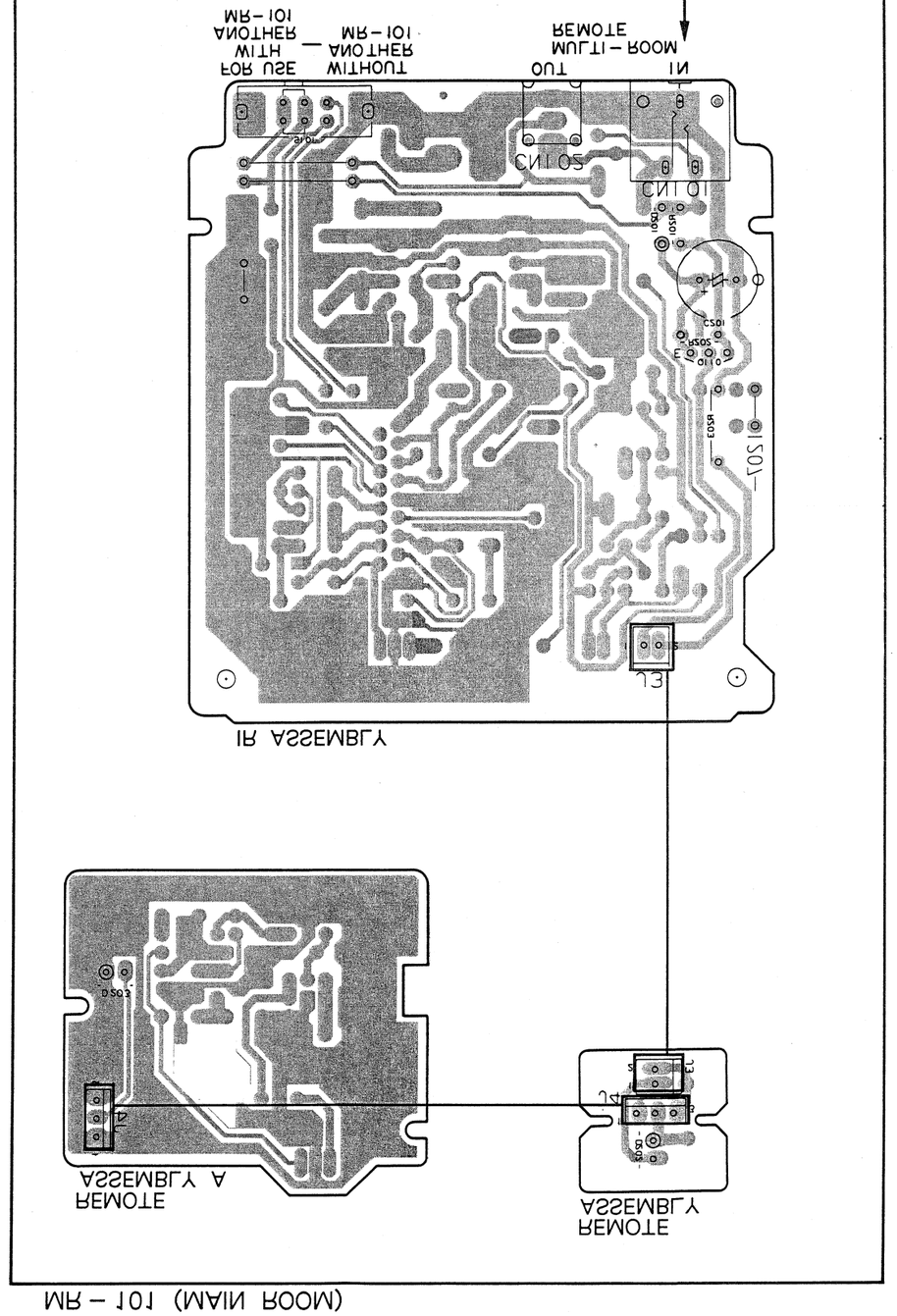
MR − 101 (MAIN ROOM)



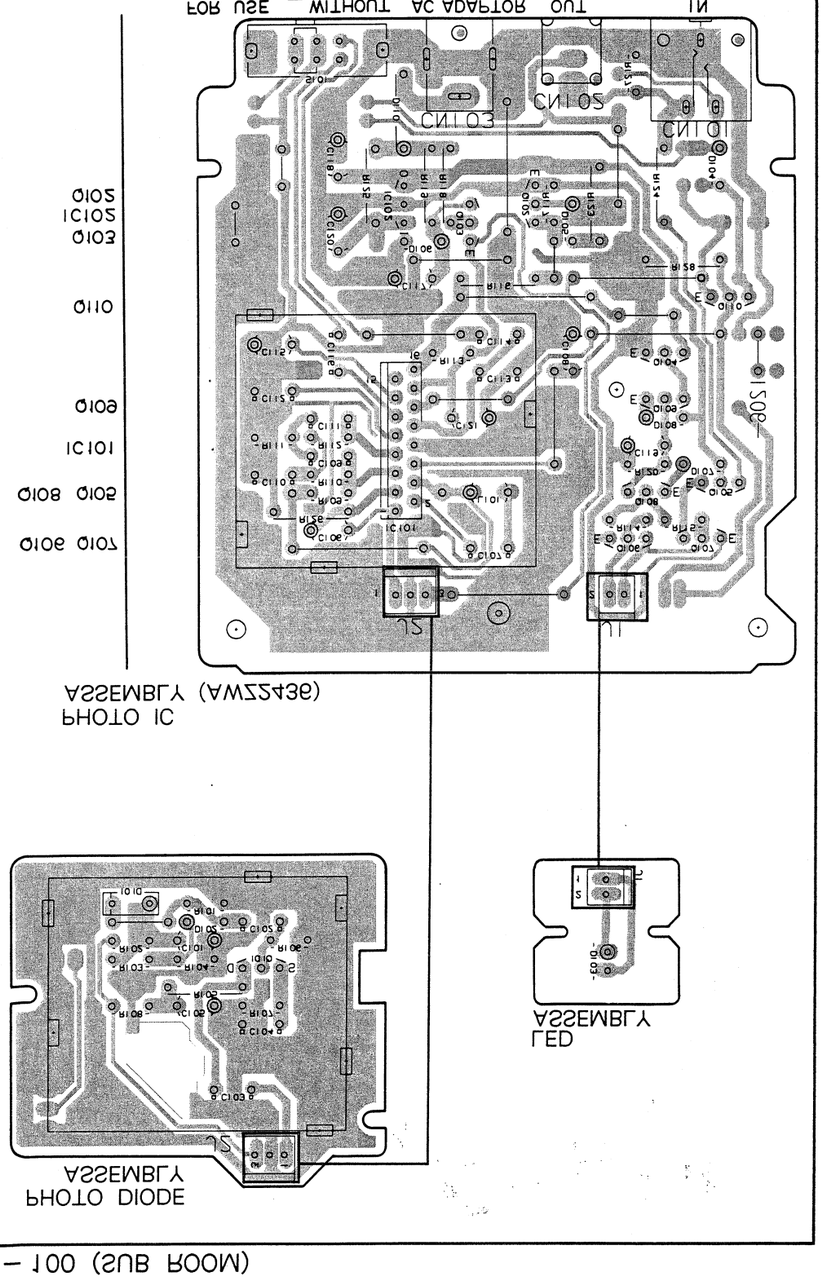
P. C. BOARDS PATTERN

This P.C.B. connection diagram is viewed from the foil side.

AM-101 (MAIN ROOM)



AM-107 (SUB ROOM)



This P.C.B. connection diagram is viewed from the foil side.